(3.) The westward spread of the species was hastened by its spreading from colonies established at Indianapolis in 1874, and at Chicago in 1875. (4.) The species has reached the natural limit to its southern extension. This is shown by the fact that it can hardly maintain itself at Apalachicola and has not pushed its way into the peninsula of Florida beyond, hardly to, Jacksonville, although it has for ten years been within what would elsewhere be not more than a year's flight away.

ON THE SYSTEMATIC POSITION OF THE MALLOPHAGA.—Dr. Packard reviews[1] our knowledge of the structure of the Bird-lice, and compares them with the Pediculidæ and with the Psocidæ. He concludes that the Mallophaga are nearest allied to the Psocidæ, and are degraded members of the order to which the Psocidæ belong. He divides his order Platyptera into two sub-orders:—

I. Mallophaga.

II. Platyptera genuina: Superfamily 1, Plecoptera (Perlidæ); Superfamily 2, Corrodentia.

The Corrodentia as restricted by Packard above includes the Termitidæ, Embididæ, and Psocidæ.

ENTOMOLOGICAL NEWS.—Mr. S. H. Scudder published in the Canadian Entomologist for November "Comparative Tables for the Families of Butterflies." The characters of the families are given at great length, and include every stage of life. Bulletin No. 3 of the State Entomologist of Illinois is a Contribution to a Knowledge of the Life-History of the Hessian-fly, by S. A. Forbes. A list of the entomological writings of Dr. A. S. Packard, with a systematic and general index, prepared by Mr. Samuel Henshaw, forms Bulletin No. 16 of the division of Entomology of the U. S. Department of Agriculture; 339 titles are enumerated.

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## ZOOLOGY.

CONTRIBUTION TO THE FRESH-WATER RHIZOPODS.—During the last season some investigation was made for Rhizopods to illustrate this important group of animals before my pupils in Zoology.

Gatherings, from sphagnum swamps, the ooze of springs, ponds and sheltered coves along the Penobscot River near Orono, were examined.

By consulting Dr. Leidy's Rhizopods of North America the following species were determined.

[1] American Philosophical Society, September 2, 1887.

The majority of the species enumerated occur in a sphagnum swamp on the College farm. The list represents the observations of a single season, and will, of course, be extended by closer research.

References to figures and plates refer to Dr. Leidy's Rhizopods of North America.

ORDER PROTOPLASTA.

*Amœba proteus*, Leidy. Page 30, Pl. 1.

Widely distributed in sphagnum swamps, the ooze of springs, ponds and sheltered coves along the Penobscot. Not plentiful in individuals, but widely distributed. Quite variable in size.

*Amœba radiosa*, Ehrenberg. Page 58, Pl. 4.

Observed in the water of a sphagnum swamp on the College farm. Two individuals were seen which assumed forms like Figs. 1, 3 and 6, Pl. 6. Changing slowly from the spherical form, and protruding a variable number of pseudopodia from one to several.

*Amœba villosa*, Wollich. Page 62, Pls. 1, 2, 7.

Several specimens of the general form of Figs. 8 and 9, Pl. 5, were seen in the water of a spring on the College farm, associated with other Rhizopods.

*Difflugia globulosa*, Du Jardin. Page 96, Pls. 15, 16.

Forms like Figs. 8 and 9, Pl. 16, are not uncommon in sphagnum swamps about Orono.

*Difflugia pyriformis*, Leidy. Page 98, Pls. 10–13, etc.

Quite common in sphagnum swamps in the Penobscot Valley. Variable in form.

*Difflugia ascula*. Page 116, Pls. 15, 16.

Forms in outline like Fig. 31, Pl. 16, were seen, but the triangular orifice in most had sides more nearly straight than Fig. 30. Not scarce in sphagnum swamps. This form is probably only a variety of D. lobostoma.

*Hyalosphenia papilio*, Leidy. Page 131, Pl. 21.

This handsome species is very common in the water of sphagnum swamps. Forms like most of the Figs. of Plate 21 were observed, and also another form, of which several specimens were seen, that is not figured by Dr. Leidy. This variety has the general outline of the normal form, but is abruptly narrowed at the minute orifices shown on the sides of Fig. 7, Pl. 21. The outline of variety lobata is given in Fig. 1, which shows the extreme of constriction. Intermediate forms seem to connect this with the normal form. The color of the test and sarcode contents of the variety is the same as in the normal form. The sarcode in all the forms observed was encysted, and composed largely of green corpuscles. The normal form is very abundant.

*Hyalosphenia tincta*, Leidy. Page 138, Pl. 20.

Forms like Figs. 11 and 12, Pl. 20, are not uncommon in sphagnum swamps, associated with H. papilio and H. elegans.

*Hyalosphenia elegans*, Leidy. Page 140, Pl. 20.

This beautiful species does not seem to be so common as H. papilio, but is quite plentiful.

*Nebela collaris.* Page 145, Pls. 22–24.

The specimens observed from one sphagnum swamp were in form like Fig. 17, Pl. 22, but sculptured more like Fig. 14. Other specimens like Fig. 14, with encysted sarcode, were seen.

*Nebela flabellum*, Leidy. Page 152, Pl. 23.

Forms like Fig. 18, Pl. 23, are not uncommon in sphagnum waters about Orono.

*Heleopera pieta*, Leidy. Page 162, Pl. 26.

Forms like Fig. 8, Pl. 26, are rather plentiful in sphagnum waters about Orono.

*Arcella vulgaris*, Ehrenberg. Page 170, Pls. 27, 28.

Clear individuals like Fig. 4, Pl. 27, were seen, also dark-colored forms flattin in shape, but probably referable to this species.

*Arcell discoides*, Ehrenberg. Page 173, Pl. 28.

The specimens observed were like the clear individual, Fig. 29, Pl. 28. No colored forms were seen.

*Centropyxis aculeata*, Ehrenberg. Page 180, Pls. 30, 31, 32.

Forms like Fig. 30, Pl. 32, with five spines, somewhat more slender and shorter, were in a gathering from a sphagnum swamp on College farm.

*Campascus.* New variety.

Forms like Figs. 2 and 3 in outline are not uncommon in sphagnum water. The shells are brownish and membranous, and, so far as observed, probably empty. They have the best neck of Campascus, but differ very much in the emorginoli fundus from C. cornutus. The specimens are about the same size as C. cornutus, but somewhat variable, as shown by figures. There is nothing like it figured in Leidy's Rhizopods. It is probably another form of this polymorphous species.

*Englypha alveolata*, Du Jardin. Page 207, Pl. 25.

The typical forms common in springs and also sphagnum water about Orono.

*Englypha ciliata*, Ehrenberg. Page 214, Pls. 35, 36.

Spineless forms like Fig. 23, Pl. 36, found in sphagmoss in a Tamarack swamp.

Ciliated forms like Fig. 20, with plates barely visible, and with two nuclei situated as in Fig. 4, but smaller. Sphagnum swamp, Orono, Me.

The typical forms common in springs, and also sphagnum water about Orono.

*Assulina seminulum*, Ehrenberg. Page 225, Pl. 37.

Forms like Figs. 15 and 24 are found sparingly in sphagnum moss in Tamarack swamps about Orono.

*Trinema enchelys.* Page 296, Pl. 39.

Forms like Figs. 46 and 47 are very common in sphagnum water. A form like Fig. 4, with a brown chitnoid membrane, is quite common. In form it is somewhat like Fig. 12, but there is nothing like it figured. It is probably referable to this species. Our specimens were not active, and the pseudopodia not observed.

ORDER HELIOZOA.

*Actinophrys sol,* Ehrenberg. Page 235, Pl. 40.

Forms like Figs. 1, 2, 3 and 4 were observed in the water of sphagnum swamps, and from pools along the Penobscot River about Orono.

*Acanthrocystis chœtophora.* Page 264, Pl. 43.

Type forms observed, though more filled with green corpuscles than Leidy's figures. Springs swamp, near Orono.—*F. L. Harvey.*

WORMS IN HEN'S-EGGS.—Dr. Edward Linton records (*Proceedings U. S. National Mus.*, 1887) the occurrence of *Distomum ovatum* in the white of a hen's-egg from Berlin, Wisc. "The occurrence of this parasite in the eggs of fowls, while not common, is not difficult to account for. Its favorite place of lodgment in its host is in the bursa of Fabricius. An individual may occasionally penetrate one of the passages which communicate with the cloaca. It is well known that such excursions are sometimes made by this parasite into the oviduct. If it should penetrate beyond the shell-forming glands when an ovum is *in transitu,* it would not be an improbable thing if the parasite should find itself enveloped in the glairy albumen which is being exuded there."

In this connection we may refer those interested to a recent article on two cases of enclosure of nematodes in hen's-eggs which are discussed in Dr. Pelletan's *Journal de Micographie,* xi. pp. 407 *et* 512, 1887.

THE RELATIONS OF THE EUROPEAN AND AMERICAN HELICIDÆ.—Dr. Wilhelm Kobelt, at the Wiesbaden meeting of the Congress of German Naturalists, compared the recent and fossil European Helices with those of America. He showed that while to-day the molluscs of Europe differed greatly from that of Central America, the miocene forms of the former country so resembled those of the Antilles and of North America that the latter might be regarded as descended from the former. He is even inclined to believe in such a genetic connection, which, contrary to that of mammals and plants, has gone from east to west, and claims that a land-bridge between the two continents must have been north of the Sahara, because of the absence of African types in America.

EXCRETORY ORGANS OF SPIDERS.—Some recent investigations of Dr. J. C. C. Loman (*Tijdsk. Nederl. Dierkunde Vereen* i. p. 109. 1886–7) on the so-called Malpighian tubes of spiders are of interest. In sections of a Javanese trap-door spider he finds that these organs differ very materially from those of the hexapods and agree with those of the amphipods, in the fact that they are diverticula of the mid rather than of the hind gut. As to the development of these organs in the spiders almost nothing is known, the two most recent authors on arachindan embryology—Locy and Schimkewitsch—having nothing to offer on the subject. The bearing of the observations of Loman tend to show that these organs are not homologous in all the "Trachcates," and possibly that the arachnids and crustaceans are more closely related than is admitted in most text-books.

THE MYLOHYOID GROOVE IN THE MESOZOIC AND RECENT MAMMALIA.—The Mesozoic Mammalia subdivide into two series, *A*, the *Multituberculata*, a marsupial suborder characterized by tubercular teeth and a pair of very prominent incisors; and, *B*, a less clearly defined group in which the incisors are numerous and subequal in size and the molars are cuspidate. All of the latter, so far as known at present, are characterized by a groove extending along the inner face of the mandible from the orifice of the dental canal, which Owen has called the *mylohyoid* groove, from its possible homology with a similar groove in the human jaw. The Multituberculata entirely lack this groove. Much stress has therefore been laid upon it in the various systems of classification. Owen figures a similar groove in *Myrmecobius*. Dr. Otto Meyer, however, recently called my attention to the fact that the groove is not present in *Myrmecobius*, and threw a doubt upon its taxonomic value. This led to my examining the mandibles of all the marsupials and Primates in the collections of Princeton, Philadelphia Academy and Yale College, with the following results: 1°. A groove similar to the mylohyoid groove of the human jaw is frequently but not constantly present among the primates: *Gorilla savagii* (strongly developed), *Troglodytes niger*, wanting; *Simia satyrus*, faintly developed; *Cynocephalus* (species?), very distinct. 2°. Among the marsupials this groove is even more variable, never very distinct; sometimes present, sometimes absent, in different individuals of the same species: *Myrmecobius*, it is entirely wanting in the two specimens in the Yale College Museum, but this does not prove that it is always absent in this genus; *Phascolomys*, present in half the specimens examined, absent in the remainder; faintly seen in some specimens of *Dasypus* and *Didelphys; Dasyurus*, *Thylacinus* and *Bettongia*, absent in all specimens thus far examined. 3°. In all the above cases this groove extends obliquely downwards and forwards from the orifice of the dental canal. The inferior dental nerve and artery branch at this orifice, part entering the canal,

part extending along the inner surface of the ramus, as the mylohyoid nerve and artery, to supply the mylohyoid and digastric muscles. There is thus little doubt that this groove lodges this artery or nerve in all these recent forms, as it does in man. 4°. In all the mesozoic mammals in which the groove is present it invariably extends from near the orifice of the dental canal, for a greater or less distance, along the inner face of the ramus, sometimes descending rapidly to the lower border (*Phascolotherium*), sometimes reaching the symphysis (*Amblotherium*). From its constant relation to the dental canal and variable development I think there is little room for doubt that this groove lodged either the mylohyoid nerve or artery; at least there is no ground for any other supposition. 5°. *Dromotherium*, from the Triassic, the oldest of the mammals of Series *B*, presents an exception; I cannot discover the orifice of the dental canal in its usual position; the anterior border of the pterygoid fossa is not clearly defined, as in all the Jurassic genera, but gradually closes into a long, narrowing groove, which suddenly terminates in an orifice in the middle of the ramus beneath the last premolariform tooth. It appears as if the inferior dental nerve and vessel may have lodged in the groove and entered the jaw at this anterior point. From all these data I see no present ground for changing the designation of this groove in the Mesozoic mammals, as employed by Owen, but strong reasons for not attaching any great taxonomic value to its presence or absence.—*Henry F. Osborn.*

The Inter-connections of Smooth Muscular Fibres.—Dr. N. Kultschizny states (*Biol. Centralbl.*, 1887) that smooth-muscle fibres are not connected together by the oft-described intercellular cement, but by means of minute protoplasmic fibres, and that between the cells exist intercellular spaces. A similar view has been held and taught for some time by some American histologists, and these even go farther and trace in the existence of these intercellular bridges, the evidence for evolution of all meso-dermal tissues from an epithelium.

The Faunal Relations of Fernando Noronha.—At the meeting of the Linnean Society of London, November 3, 1887 (according to the *Zool. Anzeiger*), Mr. H. M. Ridley gave an account of his natural history collection in Ferdando Noronha. The group of islands in question is in the South Atlantic, one hundred and ninety-four miles east of Cape San Roque. The largest is about four miles long and two miles across at the broadest part. Although chiefly basaltic, phonolite rocks crop up here and there. The cliffs are steep, but otherwise the soil is fertile; there is an absence of sandy bays on the south side. Generally speaking, the specific animal forms differ on the opposite sides of the main island. The indigenous fauna and flora seems to have been

much modified, and in some cases extirpated by human agency. Of mammals, the cat is reported to have become feral, and rats and mice swarm; Cetacea occasionally frequent the coast. The land birds comprise a species of dove, a tyrant, and a greenlet (Virio). Sea birds are numerous, but by no means so abundant as they were formerly when the island was first discovered. Among the reptiles were found a species of Amphisbæna, a scink (*Euprepes punctatus*), a gecko; turtles are also frequently seen in the bays. Batrachians and fresh-water fish are entirely absent. One butterfly, a well-known Brazilian species, was plentiful; but insects, though abundant, were poor in number of species. Two species of Trochi called for remark as having a southern distribution, the remainder of the marine shells, and indeed most of the marine fauna and flora, show affinities to that of the West Indies.

Muscles of Birds.—The researches of the late A. H. Garrod in the line of avian myology, did much to place the classification of birds upon a firm basis, as may be seen in any recent ornithological treatise of value. He showed that the peculiarities of certain muscles could be made of value in indicating the affinities of the different genera families, etc. Garrod's work has recently been presented to the American students in the shape of an illustrated review by Dr. Shufeldt, in the *Journal of Comparative Medicine and Surgery* for October, 1887. Dr. Shufeldt does not discuss the laryngeal muscles, but he adds to the muscles employed by Garrod the dermo-tensor patagii, as well as calling attention to the systematic value of other characters than the mere presence of Garrod's classificatory muscles.

A Gular Gland in the Banded Ant-Eater.—Mr. F. E. Beddard calls attention (*Proc. Zool. Soc.* London, p. 527. 1887) to a remarkable glandular structure just in front of the sternum of the banded ant-eater (*Myrmecobius fasciatus*) of Australia. In the region of the gland the integument is naked and studded with the apertures of the glands of which there are four distinct kinds: (1) sweat glands; (2) sebaceous glands; (3) sudoriferous glands; and (4) a large compound tubular gland. Of these, 1, 2, and 3 are confined to the integument, but the fourth is situated in the connective tissue underlying the dermis. The duct of the last has not been found. Histologically it resembles a sweat gland, and is divided by partitions of connective tissue.

The Mammalia of the Maragha Bed.—A report on this subject by Dr. Kittl is published in the last number of the *Annalen of K. K. Naturhistorischen Hofmuseums*, of Vienna. The species obtained number twenty-two, of which more than half have been previously discovered at Pikermi, near Athens, and the others do not indicate any wide difference of fauna. Among the peculiar

species may be mentioned the rhinoceros, *Aceratherium blanfordi* Lydd, and *Hippotherium richthofeni* Koken. Prominent Pikermi forms are—*Machœrodus leoninus* R. & W.; *Palœoreas lindermayeri*, *Helladotherium duvernoyi* Gaudry; *Mastodon pentelici* Wagn.; *Palhyœna hipparionum* Gerv.; *Hyœna eximia* Wagn., and *Sus erymanthius* R. & W. Dr. Kittl deecribes the Carnivora in the present paper. He finds the following new species: *Machœrodus orientalis* K., *Meles maraghanus*, and *Meles polaki*. The Machærodus is one of the smaller forms, allied to *M. megantereon*, but was a formidable animal—as large as a full-sized leopard.

Maragha is in Persia. The horizon is Upper Miocene, or Miopliocene.

Zoological News.—General.—Observations on the structure and distribution of stripe and unstriped muscle in the animal kingdom, conducted by C. F. Marshall, go to show that the striped form is found in the disc of medusæ, but not in Actinia nor in Echinoderms. Some Vermes show moths, as the Arthropoda and the Arachnida possess the striped form; but the Leech and the earthworm are without it, and the mollusca which possess it are those which, as Pecten, move rapidly. An intracellular network is always present in striped muscle-fibre, and this network is developed where rapid and frequent movements have to be performed. The contraction of the striped muscle-fibre is referred by Mr. Marshall to the action of the longitudinal bars of the network, while he considers the transverse fibres as passively elastic, and by their rebound as causative of the relation of the muscle-fibre. The cardiac muscle cells contain a network similar to that of ordinary striped muscle.

Arthropoda.—The development of *Peripatus Novæ-Zealandiæ* is described by Miss Lilian Sheldon in the Quart. Jour. Micros. Soc., Nov., 1887. The species is viviparous; the segmentation resembles that noted by Henking in certain Phalangidæ; and the embryo derives nutriment partly from the yolk within its body, partly from a peripheral layer.

Fishes.—Professor D'Arcy W. Thompson states (Ann. and Mag. Nat. Hist., Sept., 1887) that the blood-corpucles of Myxine, instead of being small and round, like those of Petromyzon, are large and oval, like those of skates or dog-fish.

Polyprion prognathus, the Hapuku of New Zealand, and one of the most esteemed food-fishes of the Southern Hemisphere, is, according to Dr. A. Günther, identical with *Polyprion kneri*, described by Steindachner, from Juan Fernandez. It is therefore widely distributed and antipodal to the only other species known, *P. cernium*. The latter is shown by Lowe (Fish. Madiora, p. 185) to be a deep-sea fish, swimming near the surface when young, but when adult living at depths of 300 fathoms or more.

In one of the numerous ichthyological papers emanating from the Indiana University, Carl H. Eigenmann and Eliz. G. Hughes give a review of the North American species of the genera Lagodon, Archosargus and Diplodus. The first has one species, while the second and third are represented in North America by four and seven species respectively. Mr. Eigenmann also describes *Ophichthys retropinnis*, from Pensacola, Fla.

Miss Rosa Smith bases a new species of Rhinoptera upon a pair of jaws found at Todos Santos Bay, Lower California.

BATRACHIA AND REPTILIA.—G. B. Howes (P. Z. S., June 7, 1887) points out the existence, in the larynx of some Salientia, of a structure which he believes to be homologous with the epiglottis of the higher Amniota. These are in the form of two papillate folds, constituting a forward prolongation of the laryngeal mucous membrane. Posterior to these some Anura have also a pair of folds, which Mr. Howes entitles epilaryngeal. The epiglottis is entirely membranous, and has little if any connection with deglutition. It seems to be purely an accessory voice organ. The Batrachian larynx, like the Reptilian, is without a distinct thyroid cartilage. The author gives a list of the species in which the primitive epiglottis, the paired condition of which resembles the initial stage of the development of the organ in the human subject, was observed. Some species of Hyla are without the folds, while they are present in others.

The Bulletin of the Essex Institute, 1887, contains descriptions by Mr. S. W. Garman of the Iguanidæ and Scincidæ of the West Indies, at present in the Museum of Comparative Zoology at Cambridge. No less than twelve species are added to the genus Anolis, each species apparently restricted to a small cirea. The scincoid genus Mabuia is also enriched with three new species.

Mr. Garman has also published a list of the Reptiles and Batrachians of Grand Cayman, an island of the Caribbean Sea, about 200 miles south of Cuba. Grand Cayman is of coral formation, rises but little above the sea, and must have received its land animals from the neighboring islands not so very long ago. An Anolis and a Liocephalus are described as new.

Mr. Garman has recently added to the snakes of the West Indies *Ungualia curta*, *Dromicus cubensis*, and *D. ornatus*, *Alsophis pulcher*, and *Trigonocephalus caribbæus*. A small turtle, Cinosternum sp., sent to Cambridge by Professor F. Poey, seems to possess distinct specific characters.

G. A. Boulenger (Ann. and Mag. Nat. Hist., July, 1887) describes several new Reptiles and Batrachians in the British Museum, including an Anniella and a Hyla coper,[1] from Texas; and an Eiemias from the Guinea Coast.

Years ago Dumeril and Bibron described an Australian snake under the name *Furina textilis*. It has been omitted from all recent lists of the reptiles of Australia, upon the supposition that it was based upon the common *Diemenia superciliosa*. Recently, Mr. Froggat has rediscovered the species in the neighborhood of Port Darwin.

MAMMALIA.—Among the few beaver colonies still existing in Europe is that at Amlid, some distance from Christiansand, Norway. Sometimes as many as a dozen animals may be seen here in the water at one time. Their huts are built close to the shore, and have two stories, one above and the other below the water level. The walls are of timber, the roof of twigs and mud. The beavers have felled all the aspen-trees in the vicinity, and have begun to attack the birches. They cut down trees upwards of eighteen inches across at the root, but do not seem to use the larger trunks. The branches are dragged to the water-side along regular "log-runs," which are cleared of interloping roots. Sentinels are posted to give the alarm in case of danger, when all the animals leave their dwellings for the water.

A new species of Spermophilus (*S. bactrianus* Scully) and *Ellobius intermedius* Scully, are among the mammals collected by Captain C. E. Yate, of the Afghan Boundary Commission.

E. P. Ramsay has recently described three new mammals (*Antechinus froggata, Perameles auratus, and Mus burtoni*) from North West Australia.

WORMS.—In the fresh-water Dendrocœlous planariansis an organ which is usually termed the uterus. Ijima regards this as a gland for forming the egg cocoon, and the latest student (Hallez) agrees with him. Hallez regards Ijima's muscular gland as a force-pump to drive the male elements into the cloaca, and that possibly to expel the ova and cocoons. Its resemblance in certain particulars to the bursa copulatrix of the Rhabdocoela is pointed out.

BIRDS.—Dr. W. A. Haswell, of Sydney, N. S. W., recently read a paper before the Linnean Society on the early stages of the emu, detailing the history of the primitive streak, mesoderm, neurenteric

[1] The *H. arenicola* Cope.

canal and notochord. As the embryology of no member of the Ratitæ or Struthionidæ has ever been studied, Dr. Haswell's work when published will have no little value.

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## PSYCHOLOGY.

EVOLUTION AND IDEALISM.—The doctrine of idealism is naturally attractive to the minds that believe in mind. To feel that mind is all in all, and is not bound to "low material things," is as agreeable to the metaphysician as it is to the seeker for immortality. Moreover, the doctrine seems to have a certain support from the scientific side. We know that our knowledge of what are vulgarly supposed to be the properties of matter, is not derived from a single sense, and we readily understand that those properties would appear to be greatly modified, were the number of our senses reduced or increased. Moreover, we know from experience of the abnormal or diseased states, both of ourselves and of other men, that the appearances of the objective world may be wonderfully modified by changes in ourselves. The hallucinations of delirium and other forms of mental disorder, are matter of every-day knowledge; and the illusions that may deceive even the healthy mind are equally well known. The question between the realist and the idealist is, what do these facts prove?

They certainly do not prove that a universe which presents in its parts, and therefore in its entirety, the two properties of extension and resistance, has no existence. They certainly do prove that our knowledge of such universe and of its parts is imperfect. It is to remedy this imperfection, and to enlarge our knowledge that many men spend much labor and time. And the knowledge thus acquired and exactly systematized, is called science. The pursuit of science postulates the existence of that which it pursues, not as states of consciousness, but as objective realities. There are reasons for the soundness of this view, which I propose briefly to enumerate.

If a given supposed object be in reality a purely mental state on the part of the subject, a rational cause for the production of that state is wanting. But letting this difficulty pass for the time, and letting it be supposed that there is some apparent undefined cause for such state existent when the subject is present to it, if the phenomenon be only a mental state, so soon as the subject mind betakes itself to some other locality, the supposed cause must cease to exist to that person or subject. To a second person or subject who may remain behind the first, the cause of the mental state does still exist On the departure of the second person, it ceases to exist for him but continues for the third person, and so on. In the presence of these facts, consistency requires one of two conclusions, on the part of the idealist; either he must deny the validity of the mental states